

CLAIMS

1. A method for determining the location of a tumor margin comprising:

measuring a first electrophysiological characteristic of an area of tissue to be removed;

measuring a second electrophysiological characteristic of an area of normal tissue; and

determining the location of a tumor margin based on the difference in the first electrophysiological characteristic of the area of tissue to be removed and the second electrophysiological characteristic of the area of normal tissue.

2. The method of claim 1, wherein the first electrophysiological characteristic and the second electrophysiological characteristic is an impedance of the tissue.

3. The method of claim 1, wherein the first electrophysiological characteristic and the second electrophysiological characteristic is the DC potential of the tissue.

4. The method of claim 1, further including introducing at least one agent into the area of tissue to be removed and the area of normal tissue.

5. The method of claim 1, wherein the area of normal tissue is adjacent to the area of tissue to be removed.

6. A method for determining the location of a tumor margin comprising:

measuring a first plurality of electrophysiological characteristics of an area of tissue to be removed at a first location;

measuring a second plurality of electrophysiological characteristics of an area of normal tissue at a second location; and

determining the location of a tumor margin based on the difference in first and second pluralities of electrophysiological characteristics.

7. The method of claim 6, wherein the first and second pluralities of electrophysiological characteristics are the impedance and DC potential of the tissue.

8. The method of claim 6, wherein the first and second plurality of electrophysiological characteristics are used to generate a electrophysiological profile of an area of tissue to be removed and the area of normal tissue.

9. The method of claim 6, further including introducing at least one agent into the area of tissue to be removed.

10. An apparatus for determining the location of a tumor margin comprising:

- a first electrode for measuring a first electrophysiological characteristic of an area of tissue to be removed;

- a second electrode for measuring a second electrophysiological characteristic of an area of normal tissue; and

- a device operative to determine the difference between the first and second electrophysiological characteristics.

11. The apparatus of claim 10, wherein the area of normal tissue is adjacent to the area of tissue to be removed

12. The apparatus of claim 10, wherein the first and second electrodes are on the same member.

13. An apparatus for determining an area of tissue to be removed from a body comprising:

- a first electrode for measuring a first electrophysiological characteristic of an area of tissue to be removed;

- a second electrode for measuring a second electrophysiological characteristic of an area of normal tissue;

a device operative to display the first and second electrophysiological characteristics.

14. The apparatus of claim 13, wherein the first and second electrodes form portions of a member.

15. The apparatus of claim 13, wherein the first and second electrodes are on an endoscope.

16. The apparatus of claim 13, wherein the first and second electrodes are on a biopsy device.

17. The apparatus of claim 14, wherein the member is a flexible tube.

18. The apparatus of claim 14, wherein the member is a flexible substantially flat material.

19. An apparatus for determining an area of tissue to be removed comprising:

- a first electrode for measuring a first electrophysiological characteristic of an area of tissue to be removed;

- a second electrode for measuring a second electrophysiological characteristic of an area of normal tissue;

- a first device operative to display the first electrophysiological characteristic; and

- a second device operative to display the second electrophysiological characteristic.

20. The apparatus of claim 19, wherein the first device operative to display the first electrophysiological characteristic and the second device operative to display the second electrophysiological characteristic are in a single housing.

21. A computer-readable medium having computer-executable instructions for performing a method comprising:

- measuring an electrophysiological characteristic of an area of tissue to be removed from an area of normal tissue;

determining the location of a resection margin between the area of tissue to be removed and the area of normal tissue based on the difference in the electrophysiological characteristic of the area of tissue to be removed from known values of the electrophysiological characteristic of normal tissue.

22. A computer-readable medium having computer-executable instructions for performing a method comprising:

measuring a first electrophysiological characteristic of an area of tissue to be removed;

measuring a second electrophysiological characteristic of an area of normal tissue; and

determining the location a margin between the area of tissue to be removed and the area of normal tissue based on the difference in the first electrophysiological characteristic of the area of tissue to be removed and the second electrophysiological characteristic area of normal tissue.

23. The computer-readable medium of claim 22, wherein the first electrophysiological characteristic and the second electrophysiological characteristic is the impedance of the tissue.

24. The computer-readable medium of claim 22, wherein the first electrophysiological characteristic and the second electrophysiological characteristic is the DC potential of the tissue.

25. The computer-readable medium of claim 22, further comprising introducing at least one agent into the area of tissue to be removed and the area of normal tissue.

26. A method for determining the resection margin of an area of tissue comprising:

measuring a plurality of electrophysiological characteristics of an area of tissue to be removed from an area of normal tissue; and

determining the location of a resection margin between the area of tissue to be removed and the area of normal tissue based on the difference in the electrophysiological characteristics of the area of tissue to be removed and known electrophysiological characteristics of normal tissue.

27. The method of claim 26, wherein the plurality of electrophysiological characteristics are impedance and DC potential.

28. The method of claim 26, wherein the plurality of electrophysiological characteristics are measurements of impedance taken from at least two locations within the area of tissue to be removed from an area of normal tissue.

29. The method of claim 26, wherein the plurality of electrophysiological characteristics are used to produce an electrophysiological profile of the area of tissue to be removed from an area of normal tissue.

30. The method of claim 29, wherein the electrophysiological profile is displayed on a monitor.

31. A method for facilitating the removal of an area of tissue comprising:

- measuring the electrophysiological characteristic of the area of tissue to be removed;

- comparing the electrophysiological characteristic of the area of tissue to be removed to the electrophysiological characteristic of an area of normal tissue; and

- determining the location of the area of tissue to be removed based on the comparison between the first electrophysiological characteristic of the area of tissue to be removed and the electrophysiological characteristic of an area of normal tissue.

32. A method for determining the efficacy of a form of medical treatment comprising:

- measuring a first electrophysiological characteristic of an area of tissue to be treated;

applying a treatment to the area of tissue to be treated;
measuring a second electrophysiological characteristic of
the area of tissue to be treated;

comparing the first and second electrophysiological
characteristics; and

determining the efficacy of the medical treatment based
on the comparison between the first and second
electrophysiological characteristics.

33. The method of claim 32, wherein the form of
treatment is selected from the group of treatments consisting
of ablation therapy, radiation therapy, cryotherapy, and drug
therapy.

34. A method for determining the efficacy of a form of
medical treatment comprising:

applying a treatment to an area of tissue;

measuring an electrophysiological characteristic of the
area of tissue;

comparing the electrophysiological characteristic of the
area of tissue to predetermined values;

determining the efficacy of the medical treatment based
on the comparison between the electrophysiological
characteristic and predetermined values.

35. A method for determining the efficacy of a form of
medical treatment comprising:

applying a treatment to the area of tissue to be treated;

measuring a first electrophysiological characteristic of
the area of treated tissue;

measuring a second electrophysiological characteristic of
a second area of tissue;

comparing the first and second electrophysiological
characteristics; and

determining the efficacy of the medical treatment based
on the comparison between the first and second
electrophysiological characteristics.

36. The method of claim 35, wherein the second area of tissue is normal tissue.

37. The method of claim 35, wherein the second area of tissue is adjacent to the area of tissue to be treated tissue.

38. The method of claim 35, further comprising introducing an agent into the area of tissue to be treated.

39. An apparatus for determining the efficacy of a form of treatment comprising:

- a first electrode for measuring a first electrophysiological characteristic of an area of tissue to be treated;

- a second electrode for measuring a second electrophysiological characteristic of an area of normal tissue;

- a first device operative to display the first electrophysiological characteristic; and

- a second device operative to display the second electrophysiological characteristic.

40. An apparatus for determining the efficacy of a form of treatment comprising:

- a first electrode for measuring a first electrophysiological characteristic of an area of tissue to be treated;

- a second electrode for measuring a second electrophysiological characteristic of an area of normal tissue;

- a device operative to determine the difference between the first and second electrophysiological characteristics.

41. A computer-readable medium having computer-executable instructions for performing a method for determining the efficacy of a form of treatment comprising:

- applying a treatment to an area of tissue;

- measuring an electrophysiological characteristic of the area of tissue;

comparing the electrophysiological characteristic of the area of tissue to an electrophysiological characteristic of normal tissue; and

determining the efficacy of the medical treatment based on the comparison between the electrophysiological characteristic of the area of tissue and the electrophysiological characteristic of normal tissue.